VersarINC

M E M O R A N D U M

TO: Laura Casey cc: 11.1126.2000.001
Jim Buchert

FROM: Diane Sinkowski

DATE: December 16, 2005

SUBJECT: Review of Clariant/BBL "Addenda to Conceptual Exposure Model Report (August 2004 Revision) and Exposure and Screening-Level Risk Assessment Report (April 11, 2005 Revision), Red Pigment Project" (September 16, 2005)

Per your technical directive (November 15, 2005), Versar has reviewed Clariant's September 16, 2005, submittal (herein identified as the *August 2004 Addendum* and the *April 2005 Addendum*). Below are Versar's comments, based on the items specified in the technical direction.

- Are the formulas provided in the *Addenda* appropriate and are the proposed exposure/risk model input parameters appropriate based on the information provided? If not, please provide comments and/or recommendations using appropriate EPA procedures and guidance.

  The formulas provided in the *April 2005 Addendum* are appropriate for estimating the risk-based concentration of PCBs in carpeting and the potential risk associated with exposure to PCBs in food wrap. Two issues remain with the selected input parameters. As discussed in Versar's August 1, 2005, memorandum, the worst-case risk-based concentration for PCBs in carpet fiber would be calculated by using a retention factor (RF) of 1.0, where all the PCBs in the carpeting are volatilized. Clariant did provide calculations of PCB carpet concentration based on the RF of 1.0 in the spreadsheet "forward_calcs2_7.5_1.xls". However, Table 3, page 6-1, of the *April 2005 Addendum*, does not present these carpet concentrations associated with the worst-case RF assumption. Also, the use of the weekly air exchange rate (AE) of 126, shown in Table 1, page 6-1, of the *April 2005 Addendum,* was discussed in Versar's August 1, 2005, memorandum. This AE was noted by Clariant as being based on an hourly AE rate of 0.35/hr, but is actually based on a higher AE rate of 0.75/hr. The weekly AE rate based on 0.35/hr would be 58.8. As noted in the August memorandum, Clariant had agreed to use a lower AE of 0.35/hr or, at the very least, the typical or average value of 0.45 AEs per hour, as given in the *Exposure Factors Handbook*, corresponding to a weekly AE of 75.6. According to Table 1 of the *April 2005 Addendum*, the AE rate of 126 is still being used in the calculations.

- Referring back to the August 1, 2005 Memorandum from Versar to Laura Casey (EPA-HQ), would the information provided in the Addenda affect any of these comments and/or calculations?

  The *April 2005 Addendum* calculates the risk-based concentrations of total PCBs in carpet fiber, and does not use the measured PCB concentration. Since the measured concentration is not used in the calculations, the calculations would not be affected by the new maximum value of 14.1 ppm (from the *August 2004 Addendum*). The revised PCB concentrations in food wrap, 2.4 and 0.34 ppm, were used to update the exposure estimate associated with the product. The results did not significantly change from the original estimate, based on 1.1 ppm.

- Given all information provided, does Versar have any comments and/or conclusions with respect to the appropriate input parameters which should be considered in EPA's final evaluation of the risk to end-users from the evaluated products (e.g. the carpet and food wrap)?

  As stated in first comment, the worst-case RF of 1.0 has not been included in the calculations of the risk-based concentrations (mg/kg) of total PCBs in carpet fiber (Table 3, page 6-1, of the revised April 11, 2005, exposure and screening-level assessment). Also, the more conservative AE of 0.35/hr has also not been used in the calculations included in the *April 2005 Addendum*. Versar recommends that these values be included in the *Addenda* in order to represent the most conservative exposure conditions.

- Based on Versar's review of the data usability assessment and Clariant conclusions, does Versar have any comments and/or conclusions with respect to data quality and/or its usability in the exposure model?

  Based on the data useability worksheet, it appears that the collected samples and resulting congener analyses should reflect the total PCB concentrations found in the carpet fiber manufactured with pigment reds 144/214.

- Based on the revised pigment concentrations and the revised estimated PCB concentration in the associated end products, does Versar have an opinion as to whether any other product should be evaluated or is the original assumption (e.g. carpet and food wrap are worst-case end uses with respect to exposure) still valid?

  Exposures to PCBs in carpet fiber and food wrap would be expected to still represent the worst-case exposure to end use products. The total PCB concentration of 14.1 mg/kg is the highest measured PCB concentration found in the identified industrial and consumer end use products. Additionally, assuming that residential children, a sensitive population, are exposed to the PCBs in carpeting via ingestion, inhalation, and dermal absorption should also correspond to the worst-case exposure. Also, the exposure estimate based on the assumption

that all the PCBs found in the food wrap are transferred to the cheese that has come into contact with the food wrap and that the cheese is ingested over a period of 70 years would represent a very conservative and worst-case scenario.

Please feel free to contact us if you have any questions.